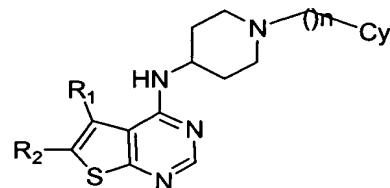


CLAIMS

What is claimed is:

1. A compound having the formula



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wherein

- R₁ and R₂ are independently hydrogen; lower alkyl; C₁-C₆ cycloalkyl or cycloheteroalkyl; halogen or halo-substituted alkyl; or R₁ and R₂, taken together, form a C₅-C₇ cycloalkyl or cycloheteroalkyl ring;
- Cy is a single or conjugated substituted or unsubstituted alicyclic or aromatic ring structure; and
- n is 0, 1, 2, 3, 4 or 5; and pharmaceutically acceptable salts and/or esters thereof.

10 2. The compound of claim 1, wherein R₁ and R₂, taken together, form a C₅-C₇ cycloalkyl or cycloheteroalkyl ring.

3. The compound of claim 2, wherein R₁ and R₂, taken together, form a cyclohexyl ring.

15 4. The compound of claim 1, wherein n is 0, 1, 2 or 3.

5. The compound of claim 1, wherein said lower alkyl is C₁-C₅ alkyl.

6. The compound of claim 1, wherein said compound is a 5-HT receptor antagonist.

7. The compound of claim 6, wherein said compound is a 5-HT₂ receptor antagonist.

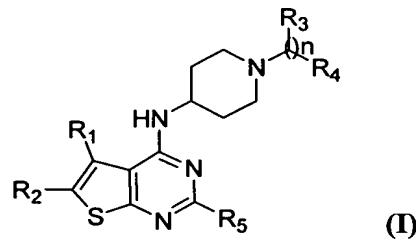
8. The compound of claim 7, wherein said compound is a 5-HT_{2A, B or C} receptor antagonist.

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9. The compound of claim 7, wherein said compound is a 5-HT_{2B} receptor antagonist.

10. The compound of claim 1, wherein said compound is [1-(2-Fluoro-benzyl)-piperidin-4-yl]-(5,6,7,8-tetrahydro-benzo[4,5]thieno[2,3-d]pyrimidin-4-yl)-amine.

11. The compound of claim 1, wherein said compound is [1-(3-Fluoro-benzyl)-piperidin-4-yl]-(5,6,7,8-tetrahydro-benzo[4,5]thieno[2,3-d]pyrimidin-4-yl)-amine.
12. The compound of claim 1, wherein said compound is [1-(4-Fluoro-benzyl)-piperidin-4-yl]-(5,6,7,8-tetrahydro-benzo[4,5]thieno[2,3-d]pyrimidin-4-yl)-amine.
- 5 13. The compound of claim 1, wherein said compound is [1-(4-Methyl-benzyl)-piperidin-4-yl]-(5,6,7,8-tetrahydro-benzo[4,5]thieno[2,3-d]pyrimidin-4-yl)-amine.
14. The compound of claim 1, wherein said compound is (1-Benzo[1,3]dioxol-5-ylmethyl-piperidin-4-yl)-(5,6,7,8-tetrahydro-benzo[4,5]thieno[2,3-d]pyrimidin-4-yl)-amine.
15. The compound of claim 1, wherein said compound is (5,6,7,8-Tetrahydro-10 benzo[4,5]thieno[2,3-d]pyrimidin-4-yl)-[1-(4-trifluoromethyl-benzyl)-piperidin-4-yl]-amine.
16. The compound of claim 1, wherein said compound is (1-Benzhydryl-piperidin-4-yl)-(5,6,7,8-tetrahydro-benzo[4,5]thieno[2,3-d]pyrimidin-4-yl)-amine.
17. The compound of claim 1, wherein said compound is (1-Naphthalen-2-ylmethyl-15 piperidin-4-yl)-(5,6,7,8-tetrahydro-benzo[4,5]thieno[2,3-d]pyrimidin-4-yl)-amine.
18. The compound of claim 1, wherein said compound is (1-Phenethyl-piperidin-4-yl)-(5,6,7,8-tetrahydro-benzo[4,5]thieno[2,3-d]pyrimidin-4-yl)-amine.
19. The compound of claim 1, wherein said compound is [1-(3-Phenyl-propyl)-piperidin-4-yl]-(5,6,7,8-tetrahydro-benzo[4,5]thieno[2,3-d]pyrimidin-4-yl)-amine.
20. The compound of claim 1, wherein said compound is (5,6,7,8-Tetrahydro-10 benzo[4,5]thieno[2,3-d]pyrimidin-4-yl)-[1-(4-trifluoromethoxy-benzyl)-piperidin-4-yl]-amine.
21. The compound of claim 1, wherein said compound is [1-(4-Methoxy-benzyl)-piperidin-4-yl]-(5,6,7,8-tetrahydro-benzo[4,5]thieno[2,3-d]pyrimidin-4-yl)-amine.
- 25 22. A compound having the formula



wherein

- R₁ and R₂ are independently be hydrogen; lower alkyl, C₁-C₆ cycloalkyl or cycloheteroalkyl; halogens or halo-substituted alkyl; or R₁ and R₂, taken together, form a C₅-C₇ cycloalkyl or cycloheteroalkyl ring;
- R₃ and R₄ are independently Ar which is a single or conjugated substituted or unsubstituted aromatic ring structure;
- R₅ is H, (C₁-C₅)alkyl, (C₁-C₆)cycloalkyl, halogen substituted alkyl, NH₂, NHMe, NMe₂, NHEt, NH(Et)₂, NH(Pr), N(Pr)₂; and
- n is 0, 1, 2, 3, 4 or 5; and pharmaceutically acceptable salts and/or esters thereof.

23. A pharmaceutical composition comprising the compound of claim 1 in an amount effective to treat depression.

24. A pharmaceutical composition comprising the compound of claim 1 in an amount effective to treat a CNS disorder.

25. A pharmaceutical composition comprising the compound of claim 1 in an amount effective to treat migraine.

26. A method of treating depression, comprising administering to a patient in need thereof a pharmaceutical composition comprising the compound of claim 1 in an amount effective to treat said depression.

27. A method of treating a CNS disorder, comprising administering to a patient in need thereof a pharmaceutical composition comprising the compound of claim 1 in an amount effective to treat said CNS disorder.

28. A method of treating a CNS disorder, comprising diagnosing a patient in need of treatment and administering to a patient in need thereof a therapy including a

pharmaceutical composition comprising the compound of claim 1 in an amount effective to treat said CNS disorder.

29. A method of treating pulmonary hypertension, comprising administering to a patient in need thereof a pharmaceutical composition comprising the compound of claim 1 in an amount effective to treat said pulmonary hypertension.
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30. A method of treating pulmonary hypertension, comprising diagnosing a patient in need of treatment and administering to a patient in need thereof a therapy including a pharmaceutical composition comprising the compound of claim 1 in an amount effective to treat said pulmonary hypertension.
- 10 31. A method of treating systemic hypertension, comprising administering to a patient in need thereof a pharmaceutical composition comprising the compound of claim 1 in an amount effective to treat said systemic hypertension.
32. A method of treating systemic hypertension, comprising diagnosing a patient in need of treatment and administering to a patient in need thereof a therapy including a pharmaceutical composition comprising the compound of claim 1 in an amount effective to treat said systemic hypertension.
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